

Non-Elected Claims

Claims 8-10 have been canceled as they are directed to a non-elected invention. Applicants reserve the right to file divisional application(s) directed to the subject matter of these claims.

Other Claim Amendments

Claims 1-3 have been cancelled. Claim 4 has been amended to recite the fermentation medium as wort. Claims 4 and 5 have been amended to overcome the 35 USC §112, second paragraph rejections. Claim 7 recites the wort as being nonaerated wort. New claim 11 recites the wort as being aerated wort as in previous claim 7. New claim 12 has a basis at page 7, lines 5-7 of the application. New claim 13 has a basis at page 7, lines 15-19 of the application. New claim 14 has a basis at page 7, lines 19-21 of the application. New claim 15 has a basis at page 7, line 25 to page 8, line 2 of the application. New claim 16 has a basis at page 8, lines 5-8 of the application. New claim 17 has a basis in previous claims 4 and 7 and at page 14 of the application. New claims 18-20 have a basis at page 13, lines 14-16 of the application.

35 USC §112

The rejection of claims 1, 2, 4 and 5 under 35 USC §112, second paragraph has been overcome by cancellation of claims 1-3 and the amendments to claims 4 and 5.

35 USC §102(b) & §103(a)

Claims 1, 3, 4, 6 and 7 were rejected under 35 USC §102(b) over Seebeck, and claims 2 and 5 were rejected under 35 USC §103(a) over Seebeck and Applicants' specification.

Looking at amended claim 4, it can be seen that the fermentation medium has been limited to wort. Also, original claim 4 recited the yeast as being suspended in a wort-free aqueous solution. This limitation has been maintained in amended claim 4. One key feature of the invention is that using wort free aqueous solutions reduces the exposure of wort to oxygen and thereby eliminates of the formation of oxidation (staling precursors). The invention eliminates wort oxidation (by oxygenating yeast in a wort free solution) and thereby extends beer's shelf life.

how?
why?

Turning now to Seebeck, there is disclosed a continuous fermentation method for solutions such as grape juice. The yeast is first aerobically cultured in a nutrient solution and when the yeast reaches a certain concentration level, a fermentation media is continuously added to the cultured yeast for continuous fermentation. Throughout the Seebeck patent, the nutrient solution is described as preferably being a fruit juice (see col. 2, line 67 to col. 3, line 1; col. 3, lines 15-17; col. 6, lines 17-18; and col. 8, lines 49-54) and the fermentation media is described as preferably being a fruit juice (see col. 3, lines 66-68; col. 4, lines 16-18; col. 5, lines 15-18; col. 6, lines 62-65; col. 7, lines 37-38; and col. 9, lines 57-59). In particular, the Examples of Seebeck use fruit juices as the nutrient solution and the fermented solution.

As noted in the Office Action, column 5, lines 19-20 of Seebeck do mention that beer wort can also be fermented by the method of the Seebeck invention. However, nothing in Seebeck suggests a suitable nutrient solution for culturing yeast that is used to ferment beer wort. Given that Seebeck repeatedly suggests a fruit juice nutrient solution for culturing yeast that is thereafter used to ferment a fruit juice, it is submitted that upon reading Seebeck, one skilled in the art would be motivated to use wort as the

nutrient solution for culturing yeast that is thereafter used to ferment wort. In fact, the culturing of yeast in smaller volumes of wort prior to fermenting wort is a known process (see page 4, lines 11-16 of the present application) that one skilled in the art would be motivated to use in the continuous fermentation methods of Seebeck given the expected mixing of residual amounts of nutrient solution and fermentable solution in the Seebeck reactor. Certainly, one would not be motivated to use a fruit juice nutrient solution (as in Seebeck) to culture yeast in a reactor that is later charged with beer wort.

Thus, while Seebeck does suggest the continuous fermentation of beer wort, nothing in Seebeck suggests the use of a wort-free solution for culturing yeast that is later used to ferment beer wort. Accordingly, it is respectfully submitted that amended claim 4 (and claims 5-7 and 11-16 that depend thereon) are patentable over Seebeck. New claim 17 and claims 18-20 that depend thereon include the limitations of claim 4 and are further limited to a medium where the wort is non-aerated. Therefore, it is respectfully submitted that new claims 17-20 are patentable over Seebeck for the same reasons, and are further distinguishable in that nothing in Seebeck suggests the fermentation of non-aerated wort. In fact, the fermentation tower in Seebeck provides for the introduction of gases into the reactor.

Conclusion

Accordingly, it is believed that the entire application has been placed in condition for allowance. Favorable reconsideration is respectfully requested. No other fees are

believed to be needed for this amendment. However, if other fees are needed, please charge them to deposit account 17-0055.

Respectfully submitted,

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Version with markings to show changes made

IN THE CLAIMS:

Claims 1-3 and 8-10 have been cancelled.

Claims 11-20 have been added.

-- 4. (Amended) A method of enhancing yeast fermentation of wort, the method comprising the steps of:

(a) suspending yeast in a wort-free aqueous solution comprising a fermentable sugar in an amount sufficient to give a gravity in the range of from about 2 to about 25 degrees Plato;

(b) aerating the suspension for a period of time with a gas comprising oxygen [and under conditions suitable] to allow oxygen uptake by the yeast required for sterol and unsaturated fatty acid synthesis;

(c) transferring the yeast of step (b) to a suitable volume of wort [fermentation medium] having a gravity comparable to the gravity of the solution of step (a); and

(d) allowing fermentation to occur under suitable fermentation conditions. --

-- 5. (Amended) The method of claim 4, wherein zinc is added to the yeast suspension [in a concentration effective to promote yeast performance in a fermentation medium]. --

-- 7. (Amended) The method of claim 4, wherein the [fermentation medium of step (c)] wort is [selected from the group consisting of aerated wort and] nonaerated wort. --